IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	)	
OAKLEY et al.	)	
	)	
Serial No. 10/543,637	)	
	)	Group Art Unit: 1616
Filed: December 05, 2005	)	
	)	Examiner: Andriae M. Holt

For : Method for yield improvement in glyphosate-resistant legumes

DECLARATION

1.   I, Lutz Brahm, Dr.agr., citizen of the Federal Republic of Germany and residing at Am Hang 16, 67551 Worms, Germany, hereby declare as follows:

I am a fully trained Agronomist having studied Agriculture at the Justus-Liebig-University of Giessen, Germany, from 1987 to 1993. I received a Diploma Degree in 1993 by the Justus-Liebig-University of Giessen, Germany. In 1997, I received the doctorate degree (Ph.D.) by the Justus-Liebig-University of Giessen, Germany.

I joined BASF Aktiengesellschaft, 67056 Ludwigshafen, Germany, in 2006. Since then, I have been working in the field of crop protection. I have read and fully understood US application Ser. No. 10/543,637 and I am familiar with the subject-matter disclosed and claimed therein;

2.   I have read and fully understood the Office Action of November 30, 2009 and the references cited therein by the Examiner;

3.   The following observations are made by me.

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4.   Supplementary Experimental Data

4.1   In order to provide further support for the claimed method and mixture, following additional test data are presented.

Soybeans were grown in 2010 in the greenhouse at the agricultural center at Limburgerhof, Germany. The variety DKC25-52 RR2 was planted in pots. The trial was setup with 10 replications with one pot 5 plants each per replication.

The active ingredients were used as formulations. The formulations were used in the product rates given below and in Table 1 and Table 2. The products were applied in a total spray volume of 375 l/ha. Products were diluted in water. The spray solution was applied in a spray cabinet using a spray boom with flat fan nozzles.

Glyphosate was applied twice as Roundup™ (360 g active per liter) at soybean growth stage 12 (BBCH) and 13 (BBCH) with a product rate of 3.125 l/ha (1125 g active per ha). Pyraclostrobin was applied once at growth stage 13 (BBCH) as HEADLINE™ (250 g active per liter) with a product rate of 0.1 l/ha (25 g active per ha). At growth stage 13 (BBCH) Roundup™ and HEADLINE™ were tank mixed.

Total shoot biomass was assessed (Table 1) by harvesting all plants of a pot 17 days after last treatment and is expressed as g per pot. Both fresh and dry weight of total shoot biomass per pot was evaluated. After measuring fresh weight, the samples were dried in a drying cabinet at 65°C until no more change in weight was observed. The efficacy was calculated as % increase of biomass in the treatments compared to the untreated control:

$$E = a/b-1 \cdot 100$$

a   corresponds to the biomass of the treated plants in g/pot and
b   corresponds to the biomass of the untreated (control) plants in g/pot

An efficacy of 0 means the yield level of the treated plants corresponds to that of the untreated control plants; an efficacy of 100 means the treated plants showed a biomass increase of 100%.

The expected efficacies of the combinations of the active compounds were estimated using Colby's formula (Colby, S.R., Calculating synergistic and antagonistic responses of herbicide combinations, Weeds, 15, pp. 20-22, 1967) and compared with the observed efficacies.

Colby's formula: $E = x + y - x \cdot y/100$

E   expected efficacy, expressed in % of the untreated control, when using the mixture of the active compounds A and B at the concentrations a and b

x   efficacy, expressed in % of the untreated control, when using the active ingredient A at the concentration a

y   efficacy, expressed in % of the untreated control, when using the active ingredient B at the concentration b

Table 1: Effect of glyphosate and pyraclostrobin application at growth stage 12 and 13 (BBCH) on fresh total shoot biomass of potted soybeans

Treatment	AI rate [g/ha]	Shoot fresh weight [g/pot]	Observed efficacy [%]	Expected* efficacy [%]	Synergism [%]
Control	-	11.363			
Glyphosate	2,250	8.282	-27.1		
Pyraclostrobin	25	11.03	-2.2		
Glyphosate + Pyraclostrobin	2,250 25	11.565	1.8	-30.83	32.63

* according to Colby's formula

Table 2: Effect of glyphosate and pyraclostrobin application at growth stage 12 and
13 (BBCH) on dry total shoot biomass of potted soybeans

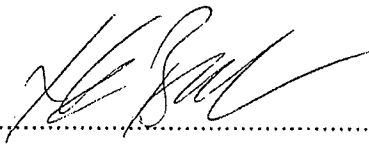| Treatment	AI rate [g/ha]	Shoot dry weight [g/pot]	Observed efficacy [%]	Expected* efficacy [%]	Synergism [%]
Control	-	1.521			
Glyphosate	2,250	1.057	-30.5		
Pyraclostrobin	25	1.541	1.3		
Glyphosate + Pyraclostrobin	2,250 25	1.641	7.9	-28,7	36.6

* according to Colby's formula

Despite the negative impact of glyphosate at the applied dose rates on crop growth,
the combined use of pyraclostrobin and glyphosate leads to a synergistic biomass
increase by the mixture compared to untreated plants.

The results demonstrate that the efficacy in the combination ratio of the active
compounds shown in tables 1 and 2 is higher than the expected efficacy calculated
using Colby's formula.

5.   The undersigned declares further that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1101 of Title 18 of the US-code and that such willful false statements may jeopardize the validity of the above-identified patent issued thereon.

Ludwigshafen, May 26, 2010   ....

                                                              (Lutz Brahm)